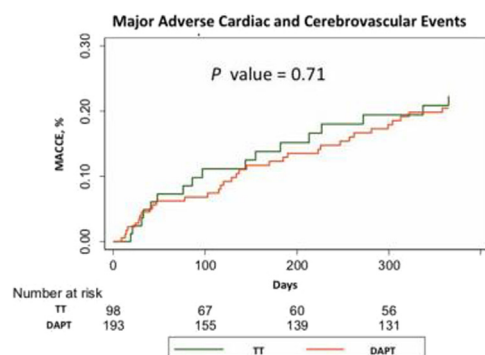


and net adverse cardiac events (25 vs. 21%, $P=0.56$) were similar in the TT and DAPT groups, respectively.

Conclusions: There does not seem to be a significant benefit of TT over DAPT in patients with paroxysmal AF in SR undergoing PCI.



TCT-164

Assessment of the efficacy of ex vivo platelet transfusion in the restoration of platelet function in acute coronary syndrome and PCI presenters treated with clopidogrel, prasugrel or ticagrelor – The APTITUDE study

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Background: The Antagonize P2Y12 Treatment Inhibitors by Transfusion of platelets in an Urgent or DELayed Timing after ACS or PCI presentation (The APTITUDE study) was designed to demonstrate the effect of ex vivo platelet transfusion (PT) in a coronary population receiving loading doses of P2Y12 receptor antagonists.

Methods: Patients presenting with acute coronary syndrome or for elective PCI and receiving a loading dose of either clopidogrel 600/900mg, prasugrel 60mg or ticagrelor 180mg were included. Blood was drawn from participants at two different time points; just before administration of the P2Y12 inhibitor loading dose (LD) (H0) and 4-6 hours after (H4). Transfusion was performed ex vivo by mixing naïve platelets in the form of platelet rich plasma (PRP-H0) with PRP at H4 (PRP-H4) in increasing proportions. The primary study endpoint was the percentage restoration of platelet function with addition of 80% proportion of PRP H0 measured by the residual platelet aggregation (RPA) in response to 20 µM ADP {RPA (80%/20% H0/H4 mix)/RPA baseline x 100} using light transmission aggregometry.

Results: A total of 56 patients (76% male) half (n=28) presenting with ACS and half presenting for elective PCI were included. Baseline RPA did not differ significantly between groups ($p=0.65$). Patients with poor pharmacodynamic response to the LD administered (RPA H4>46.6%) were excluded from the final analysis leaving 45 patients: Groups 1. clopidogrel 600mg (n=13) 2. clopidogrel 900mg (n=12) 3. prasugrel 60mg (n=10) 4. ticagrelor 180mg (n=10). Increasing proportions (30%, 50%, 80%) of platelet transfusion led to a stepwise increase in restoration of platelet reactivity in all groups 1-4 (p for trend < 0.0001, 0.01, <0.0001 and 0.0052 respectively). The primary endpoint of % restoration of platelet function with 80% proportion PT showed a stepwise decrease from groups 1 to 4 (83.9±11%, 73±14%, 66.3±15%, 40.9±19% respectively; p for trend < 0.0001).

Conclusions: The efficacy of ex vivo platelet transfusion in normalization of platelet function appears to decrease with more potent P2Y12 receptor antagonism and to be the least with direct P2Y12 inhibitors.

TCT-165

Ticagrelor vs Prasugrel maintenance dose in patients with acute coronary syndrome: a pharmacodynamic comparison

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Background: Data on direct pharmacodynamic comparison between ticagrelor and prasugrel are limited, mainly involving specific subgroups (e.g. patients with ST

elevation myocardial infarction-STEMI, diabetes mellitus or high platelet reactivity under clopidogrel).

Methods: This was a prospective, single-center study, in consecutive patients with acute coronary syndrome (ACS), who underwent percutaneous coronary intervention (PCI). Platelet reactivity (PR) measurement was performed 30 days after constant treatment with ticagrelor 90mg bid or prasugrel 10mg od maintenance dose. Treatment choice was at physicians' discretion. Bleeding events (Bleeding Academic Research Consortium –BARC classification) were also monitored.

Results: We recruited 384 patients (with a mean age of 59.3±11.1 years, 83.6% men, 24.5% diabetics and 55.7% admitted with STEMI), out of them 211 and 173 received ticagrelor and prasugrel respectively. Demographic and angiographic characteristics of patients were well balanced between groups. After propensity score adjustment for gender, diabetes mellitus, smoking, creatinine clearance<60ml/min, age, hematocrit, platelet count and body mass index, PR at 30 days was significantly lower with ticagrelor compared with prasugrel (34.4, 95%CI 28.2–40.7 versus 81.9, 95%CI 74.9–88.8, $p<0.001$). There was a trend towards more BARC type 1 events with ticagrelor compared to prasugrel at 30 days (38.9% vs 29.5%, $p=0.07$). However, BARC type ≥2 events did not differ between ticagrelor and prasugrel (1.4% vs 2.9%, $p=0.5$).

Conclusions: In patients with ACS undergoing PCI, ticagrelor MD produces a significantly higher platelet inhibition compared to prasugrel MD. This observed pharmacodynamic difference might be associated with more nuisance bleeding events with ticagrelor use.

TCT-166

Correlates of High Platelet Reactivity on Clopidogrel in 8,533 Patients: An ADAPT-DES Substudy

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Background: Several studies have demonstrated an association between high platelet reactivity (HPR) on clopidogrel and the risk of stent thrombosis and adverse ischemic outcomes. We sought to determine the correlates of HPR from a large observational study of patients undergoing routine platelet reactivity testing.

Methods: ADAPT-DES was a prospective multicenter study of pts treated with coronary DES designed to determine the predictors of stent thrombosis. VerifyNow P2Y12 testing was performed after clopidogrel loading in 8,583 "all-comer" pts enrolled at 11 international sites. Linear regression of platelet reactivity units (PRU) on baseline and procedural covariates was used to determine independent correlates of PRU.

Results: The mean age was 63.6 years, an acute coronary syndrome was present in 51.7% of pts, and the mean PRU was 188 ± 97. Baseline demographic characteristics independently associated with higher PRU included: age, body mass index, female sex, non-Caucasian ethnicity, diabetes, non-smoking status, prior myocardial infarction, and anemia. Pre-hospital use of a thienopyridine or statin was independently associated with higher PRU. When procedural characteristics were examined in addition to baseline covariates, use of femoral vascular access, intra-aortic balloon pump, and bivalirudin for anticoagulation were all independently associated with higher PRU, as were baseline TIMI 0/1 flow, total stent length, and treatment of calcific lesions. Further modeling to identify the percent contribution of each of these covariates to the overall variance of PRU will be performed/presented.

Conclusions: In a large unselected cohort of patients undergoing PCI with DES, numerous independent correlates of HPR were identified, including demographic characteristics, comorbid conditions, antecedent medications, and procedural variables. These findings illustrate the multifactorial nature of clopidogrel responsiveness among patients undergoing PCI.